

©
Government of Kerala
കേരള സർക്കാർ
2013



Regn. No. KERBIL/2012/45073
dated 5-9-2012 with RNI

Reg. No. റജി. നമ്പർ
KL/TV(N)/634/2012-14

KERALA GAZETTE

കേരള ശസ്ത്ര

PUBLISHED BY AUTHORITY

അധികാരികമായി പ്രസിദ്ധീകൃതമുന്നത്

Vol. II വാല്യം 2	THIRUVANANTHAPURAM, TUESDAY തിരുവനന്തപുരം, ചേന്നൈ	8th January 2013 2013 ജനുവരി 8	No. നമ്പർ	2
		18th Pousha 1934 1934 പെഡം 18		

PART III

Stores Purchase

Fire Force Department

RE-TENDER NOTICE

No. F1-11578/2012.

17th December 2012.

Sealed tenders are invited for the purchase of 2 Nos. of Water Bousers to Fire and Rescue Services Department. Details of items can be had along with the tender forms. The tenders are to reach the undersigned before 5 p. m. on 11-1-2013.

Estimate Cost — ` 80,00,000.

The tenders should be superscribed as tender No. 38/2012 and addressed to the Commandant General, Home Guards, Civil Defence and Fire and Rescue Services Headquarters, Housing Board Junction, Thiruvananthapuram-1. Late tenders will not be accepted. The tenders will be opened at 11 a. m. on 12-1-2013 in the presence of such tenderers or their authorized representatives who may be present at that time.

Indending tenderers may on application to the Commandant General obtain requisite tender forms on which tenders should be submitted. Application for the

tender form should be accompanied by a cash remittance/money order of ` 12,000 + 4% VAT (Round to nearest rupee) per copy which is the price fixed by Government and is not refundable under any circumstances. The tender forms are not transferable. The sale of tender forms will be closed at 3 p. m. on 10-1-2013. Neither Cheques, Bank Drafts, Postal Orders, Postage Stamps etc. will be accepted towards the cost of tender forms, nor will the tender forms be sent per Value Payable Post. Duplicate tender forms, if required will be supplied @ ` 6,000 + 4% VAT per copy. The tenderers are to read the general conditions given in the tender forms carefully before the forms are filled up.

Kerala Stamp Paper will be supplied to firms outside state if required by a separate cash remittance of ` 120 Money Order.

കേരള ഹയർ ആസ്റ്റ് റിസ്ക്യൂ സർവീസസ് വകുപ്പിലേക്ക് വാടകൾ ബൗസർ 2 എണ്ണം ഫാബ്രിക്കേറ്റ് ചെയ്ത് വിതരണം ചെയ്യുന്നതിലേക്കായി താൽപ്പര്യമുള്ളവരിൽ നിന്നും മുദ്രവച്ച ദർശാസുകൾ 38/2012 നമ്പരായി ക്ഷണിച്ചു കൊള്ളുന്നു. മേൽപ്പറ്റി ദർശാസിരേഖ വിശദവിവരങ്ങൾ ദർശാസിനോടൊപ്പം ലഭിക്കുന്നതാണ്.

അടക്കത്തുക— ` 80,00,000.

അസ്ത്ര ദർശാസ് ഫോറത്തിന്റെ വില ` 12,000 + 4% മൂല്യാധിഷ്ഠിത നികുതിയും ഈ ഓഫീസിൽ ഒടുക്കേണ്ടതാണ്. ഡ്യൂപ്പിക്കേറ്റ് ദർശാസ് ഫോറത്തിന്റെ വില ` 6,000 + 4% മൂല്യാധിഷ്ഠിത നികുതിയും ഒടുക്കേണ്ടതാണ്. ടെണ്ടർ ഫോറത്തിന്റെ വില യാതൊരു കാരണവശാലും മടക്കിക്കൊടുക്കുന്നതാണ്. ടെണ്ടർ ഫോറത്തിന്റെ വിലപത 10-1-2013, 3 മണിക്ക് അവസാനിക്കുന്നതാണ്. നിശ്ചിത ഫോറത്തിലുള്ള ദർശാസുകൾ 11-1-2013 വെക്കുന്നേരം 5 മണിക്ക് മുമ്പായി ഈ ഓഫീസിൽ ലഭിക്കേണ്ടതാണ്. പ്രസ്തുത തീയതിക്കുശേഷം ലഭിക്കുന്ന ദർശാസുകൾ യാതൊരു കാരണവശാലും പരിഗണിക്കുന്നതല്ല. 12-1-2013 രാവിലെ 11 മണിക്ക് ദർശാസുകാരുടെയോ അവരുടെ അംഗീകൃത പ്രതിനിധികളുടെയോ സാമ്പിയന്റിലെവച്ച് ദർശാസുകൾ തുറക്കുന്നതായിരിക്കും. ദർശാസ് ഫോറങ്ങൾ കൈമാറ്റം ചെയ്യാൻ പാടില്ല.

ഈ ദർശാസിനെ സംബന്ധിച്ച വിശദവിവരങ്ങൾ, വ്യവസ്ഥകൾ, ദർശാസ് ഫോറങ്ങൾ മുതലായവ കമാസ്റ്റീജനിൽ, ഫോം ഗാർഡ്, സിവിൽ ഡിക്ഷൻസ്, ഹയർ ആസ്റ്റ് റിസ്ക്യൂ സർവീസസ്, കേരള ഹൗസിംഗ് ബോർഡ് ജംഗ്ഷൻ, പൂളിമുക് പി.ഐ., തിരുവനന്തപുരം-695 001 എന്ന ഓഫീസിനും ഓഫീസിൽനിന്ന് എല്ലാ പ്രവൃത്തി ദിവസങ്ങളിലും വെക്കുന്നേരം 5 മണിവരെ ലഭിക്കുന്നതാണ്. ദർശാസിന്റെ വില യാതൊരു കാരണവശാലും പോറ്റുൽ ഓർഡർ, പോറ്റു ട്രാൻസ്, ചെക്ക്, ബാങ്ക് ഡ്രാഫ്റ്റ് എന്നിവയായി സീക്രിക്കറ്റുന്നതല്ല.

SPECIFICATION

1.0 Chasis:

The fabrication of water bouster shall be done on Cowl chassis supplied by Kerala Fire and Rescue Services. (TATA LPT 2518/Ashok Leyland Tarus 2516 or similar with Power Steering.)

2.0 General:

The appliance shall carry a water tank having a capacity of 12000 ltrs. of water fitted with a pump at the rear of the appliance driven through PTO, having performance as indicated in clause-5.0. The fabrication shall be done so as to meet all the provisions of this document.

3.0 Material Selection and Treatment:

- 3.1 The choice of materials to be used in fabrication of the appliance shall be made with a view to combine lightness, strength and durability.
- 3.2 The timber shall not be used for body construction.
- 3.3 All parts which firm water ways shall be of corrosion resistant material. All metal pipelines shall be dipped galvanized after completing fabrication of pipe line including flanges/joints. All metal parts exposed to atmosphere shall either be corrosion resistant material or so treated as to offer resistance to corrosion. All pipe used is fabrication shall at least be of medium duty and duly ISI marked.

4.0 Tank :

- 4.1 Single water tank mounted on chassis shall be capable of carrying 12000 ltrs. of water. It shall be of welded construction and fabricated out of mild steel sheet bearing ISI marking. Thickness of sheet at the bottom shall not be less than 5.0 mm and for the sides and baffle not less than 3.0 mm. The thickness of sheet at bottom shall not be less than 5.0 mm thickness. The tank shall be suitably baffled in both directions to prevent surge. The baffle shall be bolted panel type and bolting shall be done with stainless steel bolts and nuts. It shall be mounted in a manner to keep the center of gravity as low as possible and also to make the water to flow towards the pump.
- 4.2 Suitable lifting eye will be provided on the shell of the tank to enable the tank to be lifted off the vehicle for repairs etc.
- 4.3 The tank shall be fitted with three manholes of 450 mm dia. on the top of the tank. The cover of the manhole shall be hinged type. The drainpipe shall not be less than 50 mm dia. Through out and shall be taken down to point well below the chassis without reducing effective ground clearance and shall discharge away from the wheel.
- 4.4 One over flow pipe not less than 100 mm dia. shall be fitted to the tank and taken down to the point well below the chassis without reducing the effective ground clearance when fully loaded. The pipe shall be so arranged that the water will overflow while refilling the tank and that no water shall overflow when appliance is in motion.

- 4.5 One filling pipe (Hydrant Connection) of not less than 63 mm and with 63 mm. dia. male shall be so instantaneous coupling fitted to the tank as to discharge in to the tank from top side. This connection shall be fitted with gate valve to prevent water leaking through the filling pipes.
- 4.6 The tank shall be provided with two cleaning holes at the bottom of not less than 250 mm. dia. and shall be fitted with bolted cover.
- 4.7 The plumbing between the tank and the pump shall have clear and unobstructed water way of not less than not 100 mm.
- 4.8 Suitable arrangement shall be provided for self filling the water tank directly from the pump using 50 mm. pipe and a gate valve.
- 4.9 The water tank with all its fitments shall withstand hydraulic test pressure of 0.3 kgf/cm² without any leakages and deformation.
- 4.10 All plumbing shall be reasonably accessible for maintenance purpose. Screwed bends, sharp flange joints shall be avoided as far as possible.
- 4.11 The tank shall be sand blasted before giving an epoxy treatment. The epoxy treatment shall consist of two coats of primer with two coats of epoxy finish.
- 4.12 Suitable arrangement using channel/turf shall be provided on the top of water tank (all along the length) for channelizing the spilled water to the rear of the tank and thereafter to the ground using suitable pipes.

5.0 Pump:

The pump shall be single stage centrifugal pump capable of giving discharge at high and low pressure as specified.

5.1 Pump Performance

- 5.1.1 The pump will perform the following duties.

5.1.2 Simultaneous Operator

1. Maximum pressure in normal pressure mode— 14 kg/cm²
2. Maximum pressure in high pressure mode— 35 kg/cm²

5.1.3 Maximum Pressure

1. Maximum pressure in normal pressure mode— 14 kg/cm²
2. Maximum pressure in high pressure mode— 35 kg/cm²

5.1.4 Deep Lift

1. The pump shall be capable of priming depth from 7.0 mtrs. (after considering the allowances as per IS 950-1980) within 24 seconds.

5.1.5 Priming

1. The pump shall be provided with a reciprocating priming device capable of priming requiring engine rpm not more than 2400 and from 3.0m depth within 12 seconds.

5.1.6 Dry Vacuum

The pump should dry attain dry vacuum 640mm hg. 5.1.7 The reciprocating pistons should be made up of stainless steel (In investment casting) and reciprocating in special self-lubricated liner bearing. The cylinder and priming valve.

Housings should be made up of gunmetal. The eccentric cam should be fitted on pumps main shaft to operated the primer pistons should be operated. The primer should be engaged and disengage automatically when a pump pressure is in the range of 1.5 to 2.0 kg/cm²

5.2 Material of Construction

1. The overall pump construction should be of high strength seawater resistant hard anodized light Aluminium Alloy. The aluminium castings should be heat treated to impart high strength and hardness to the components. The normal (low) pressure impeller pump volute, delivery manifold, delivery valves and high pressure circuitry should be made of light Aluminium alloy.
2. The pump wearing rings should be made of stainless steel confirming to Grade II of IS 318/1981 and the regenerative type high-pressure impeller should be of Aluminium Bronze.
3. The pump shaft shall be made of stainless steel confirming to IS 6603/1972. The bearing housing should be made of C.I. All studs/bolts coming in contact with water should be of stainless steel.

5.3 Pump Construction

1. The low pressure and high-pressure (HP) impeller should be mounted on a single shaft.
2. The normal low-pressure (LP) impeller should be dynamically balanced. The pump should have self-adjusting Mechanical Carbon Seal.
3. The pump should have an inbuilt filter made of stainless or removable type Steel "V" wire mesh and be of removable type.
4. Operation of HP to LP or LP to HP shall be possible by actuation of a single lever an both the stages can operate simultaneously or individually.
5. The pump should have inbuilt pressure release Valve (PRV) which operates automatically, not to allow the high-pressure to increase beyond 45 bar.

6. The Thermal Relief Valve (TRV) should be fitted with the pump, which helps to control the temperature within 42°C of pump water when both deliveries (HP & LP) are shutoff for long time.
7. The pump should be modular in design and should have no gaskets/packings. The arrangement should be such that while carrying out the pump maintenance work none of the discharge piping is necessary to be removed and the pump impellers and the carbon seal can be removed without removing the pump volute/body.
8. The pump should have deep groove heavy-duty dual angular contact bearing immersed in oil bath.
9. The pump should be having one suction inlet of 100 mm. having round threads confirming to IS 902-1974 and two nos of 63 mm. delivery outlets having screw down type valves fitted with instantaneous couplings as per IS 903/1993. The delivery valve screw should have no gland. The high pressure outlet should not be less than 19.0 mm and minimum two outlets for high-pressure should be provided.
10. The horizontal reciprocating priming system fully automatic in action and require no attention whatsoever from the pump operator other than throttling the engine.

5.4 Pump Tests

The pump will also be tested for the following tests:

- a. Static hydraulic test of assembly at 21 kg/cm².
- b. The high-pressure section shall withstand a pressure of hydrostatic test 52 kg/cm. sq.
- c. The pump shall be capable to perform low pressure and high pressure mode simultaneously or individually.
- d. Dry vacuum test will attain 640 mm. of Hg with in 20 secs.
- e. The pump shall be capable running for a period of three hours non-stop delivering the rated low-pressure output with a suction lift of 3.0 mtrs. And for one hour operating in high pressure mode.

6.0 Hose Reel

Two high pressure hose reel (one on either side) fitted with trigger operated fog gun (adjustable from high velocity jet stream and low velocity fog through actuation of the trigger) shall be installed. The guns should be made of light aluminium Alloy, designed for operational safety and

effective for optimum fire extinguishing capacity. The gun must be ergonomically designed and must have large support area for resting the gun on firemen body. The jet should be adjusted to four operational conditions by only one rotating grip. (1) Full jet. (2) 30 degree Narrow Spray. (3) 60 degree Wide spray. (4) Self protection water shield. The high-pressure gun should be hydrostatically tested for 55 kg/cm² and it has specially designed piston valve, which shall flush out external impurities up to 5 mm during the operation. The gun should have water pressure hammer shock absorber for safety and to insure the hose, hose reel and pump. The flow Rate of gun should be in high pressure mode 200 lmm @ 40 kg/cm² and throwing range up to 25 mtrs. at ideal conditions. The length of the hose reel should be 45 mtrs. with manual mechanism to roll the hose. Additional spare hose reel of 45m. long of self supporting stand shall be supplied along with above.

8.0 Monitor:

The appliance shall be fitted with water monitor at the top with suitable control valve near the pump as well as near the monitor. It shall be capable of delivering @ 1100 LPM at 7.0 kg/cm² with a jet throw not less 20m. The monitor shall be capable of traversing to 360° in horizontal plan and +45° vertically. It shall be provided with a suitable nozzle made of aluminium alloy.

9.0 Body Work/Stowage/Cabin:

- 9.1 Enclosed accommodation with double compartment for six people with driver and Officer in the front and a crew at the rear shall be provided. The driver set shall be of adjustable type. The design of the cab shall be such that it affords max. possible vision. Two-hinged door shall be provided on both side of the appliance for easy access to driver and crew. All doors shall open outward and hung forward. The locking arrangement shall be with double catch striking plate. Non-slip step and grab rails coated with plastic shall be provided to assist the driver and crew to get in and out. All the seats shall be fitted with 100 mm thick foam cushion. All windows shall have safety glasses and all glasses be filled with winding type regulator. Two number sun visors shall be provided one on each side. The construction of cab shall be such that the roof shall support the weight of two men without damage.

- 9.2 The cab lockers should be composite construction with sufficient rigidity reinforcement and to be kept as light as possible. The entire structure shall be made of 32 x 32 x 1.6 mm square tube of M. S. Aluminium sheet (16 gauge) shall be used for

exterior paneling work all over. For inner wall of the lockers to gauge mild steel shall be used. Aluminium checker plate (2.5 mm thick) shall be used for locker and cab floor. Inspection maintenance hatch of removable type shall be provided in the cabin for gaining access to gear box/P.T.O.

- 9.3 There shall be two lockers, one on either side of the chassis at the rear of appliance for stowage, in addition to a through and through locker just behind the crew cab. The lockers shall be composite construction. The doors of the lockers shall have efficient means for holding them closed by flush fitting spring-loaded locks and hinged at side. Inner walls of the locker shall be of 16 gauge M. S. and 2.5 mm thick aluminum checker plate for flooring. All lockers shall be weather proof and self-draining type. All lockers shall be provided with internal automatic lighting arrangement with the master switch in the cab. The pump and other fitments shall be covered by hinged door with suitable locking device at the rear.
- 9.4 The suction hose tunnel shall be provided at suitable location for carrying for number of 2.5 m long, 100 mm dia Suction hose.

9.0 Revolving Light/Fire Bell:

- 9.1 Two revolving lights of amber colour shall be fixed on the roof of the cab (one on either side) A two-tone siren with necessary amplifier and operating control shall be fitted in front of officer's seat. The revolving light and electronic two tone siren shall be of "Grand Make" Model GM 103 TF and GES-40 FTF.
- 9.2 A fire bell of 250 m dia. Natural tone carillon shall be mounted externally and capable of being operated from the driver's compartment shall be provided.

10.0 Control Panel:

The following controls shall be provided at the rear pump operating panel.

- (a) Pressure gauge 0 to 17 kgf/cm² (in blank)
- (b) Compound gauge calibrated as
 - (i) Pressure 0 to 7 Kgf/cm² (in black)
 - (ii) Vacuum 0 to 75 cm Hg (in red)
- (c) Engine throttle control
- (d) Priming control lever
- (e) Pump hour meter in cabin
- (f) A flasher light and audio cum visual warning arrangement (90 db output) at driver's cabin and pump panel at rear for engine temperature exceeding 90°C.

11.0 Valve:

All valves used in the water lines shall be G. M. gate valve with relevant I. S. marking.

12.0 Workmanship and Finish:

- 12.1 All part of the appliance shall be of good workmanship and shall have streamline finish. All mechanical and other part shall be such that parts normally required to be replaced can be supplied and fit correctly.
- 12.2 The appliance will be painted 'fire red' two coats conforming to shade 536 of IS: 5-1978 and paint conforming to IS 2932. Necessary anti corrosion and primer coat shall be applied before painting in order to achieve gloss finish. The under chassis shall be painted black. The inside of locker shall be painted cream.
- 12.3 Fire service insignia shall be painted on both sides of the appliance and golden and black and lettering Kerala Fire and Rescue Services shall be done on either side of appliance in yellow paint.

13.0 Accessories/Equipments :

- (a) Fog lamp fitted in front of appliance—02 Nos.
- (b) Reversing lights fitted at the rear of appliance—01 No.
- (c) Four Nos. of Plastic Dutron Kanaflex make suction hose 2.5 mts. Each Black heavy duty.
- (d) Light alloy, water cooled portable fire pump coupled to a suitable gasoline runs engine and capable of delivering 1800 Lts./min. at 0.8 Mpa and 1500 Lts./min. at 1.0 Mpa. The pump shall be fitted with a suction inlet and two delivery outlets conforming to relevant Indian Standards. The priming system shall be capable of lifting water from m 7 m depth within 30 sec. The engine shall be battery start and the dry weight of the unit shall not exceed 100 kgs.
- (e) Fire hook as per IS-927—01 No.
- (f) Delivery hoses of type B ISI marked 50 mm dia. 30 mts. Long with heavy duty G. M. couplings instantaneous 63 mm male & female duly binded using copper wires—10 Nos.
- (g) Lock/bolt cutter heavy duty with minimum of 1050 mm-42" with capability to cut high tensile bolts, rods & wires upto 12.7mm.

14.0 Instruction Book :

Three set of following literature shall be supplied.

- (a) User's hand book with illustrations both for operating and normal maintenance procedure of appliance.
- (b) Work shop repair manual.
- (c) Illustrated part identification list.

15.0 Acceptance Tests/Testing Facilities:

The following test shall be carried out before accepting the vehicle. These shall be carried out at the manufacture works. All material required during the acceptance test will be provided by the manufacturer.

- 15.1 The front axle, rear axle and total weight of the loaded appliance shall be checked and the same should not exceed the manufacturer specifications.
- 15.2 The pump shall be run for a period of 4 hours (non-stop) to check the rated output at varying pressure as per clause 5.0. The output shall be checked using "v" notch method/flow meter. The engine shall show no sign of distress during test.
- 15.3 The pump casing and impeller shall be subject to hydraulic test as specified in clause 5.0 i.e. 21 kgf/cm².
- 15.4 PRIMER TEST: The priming system shall be tested for the requirement as laid down in clause 6.0. The shall be carried out immediately after the pump out put test.
- 15.5 The tank shall be tested as per clause 4.8.

16.0 Manufacture Guarantee Certificate:

- 16.1 The manufacturer shall furnish a guarantee for the material. Workmanship and performance of the appliance for a period of two year from the date of receipt of equipment.
- 16.2 The manufacturer shall be responsible for replacing any part which may become unserviceable during the above period due to substandard material/bad workmanship, free of all charges.

17.0 Note:

The manufacture may take note of the following points before submitting the tender document.

- 17.1 The vehicle shall be inspected in two stages.
 - (a) After completion of basic frame work, tank ready but not mounted, pump ready but not mounted, structural work.
 - (b) Acceptance test as per clause 15.0 once the vehicle is ready in all respect.
- 17.2 The fabricated vehicle shall meet all the regulation with respect to motor vehicle act/RTO regulation enforce and in no case exceeds the manufacturer specification w.r.t. chassis.
- 17.3 The delivery of the chassis shall be given to the successful vendor from workshop and the accepted vehicle shall be delivered at the workshop by the vendor.

18.0 Power take off:

The pump shall be coupled to the prime mover of the chassis through a P.T.O. ratio 1:1:33, 6000 NM—1.33 R-96 H graded C. 1 extra heavy duty, single mechanical 7 pneumatic (New) shifting. Drive line shaft bearing size 55 mm. P.T.O. output shaft bearing size 50 mm, gear torque upto continuous rating 6000 NM. A control level (for mechanical shifting) and hand level operated valve (for pneumatic shafting) for engaging and disengaging the pump with suitable locking device, will be provided in the driver's cabin. The fabricator shall submit proof of purchasing a brand new PTO unit. The P.T.O. shall be fitted to plate at the input output flinching of P.T.O. the plate shall be of minimum 8 mm thickness.

CONDITIONS

- | | | | |
|---|---|---|--|
| 1 | Whether samples are — | Palmlets, Photograph etc. essential | should be forwarded along with tender. |
| 2 | Period with in which — | goods should be delivered | With in two months from the receipt of supply order. |
| 3 | Rates should be quoted for the delivery including transporting charge of the chassis to Kerala Fire and Rescue Services Hqrs. | — FOR, Trivandrum. | |
| 4 | Payment | — 90% payment against delivery at Thiruvananthapuram in good condition. | |
| 5 | Other Special condition | — A guarantee of 2 years from the delivery of item. | |

Fire and Rescue Services Hqrs.,

Housing Board Junction,

(Sd.)

Thiruvananthapuram.

Commandant General.